

WHAT IS CLAIMED IS:

1. A washing water circulation apparatus, comprising:
a circulation motor communicating with a lower side of a tub of a washing machine,
for pumping water in the tub;

5 a circulation hose of which one end is connected with the circulation motor, for
guiding the pumped water; and

an injection unit including a connector of which one end is connected with the
circulation hose, and a nozzle provided below the gasket, the connector being installed
between a door and the tub and provided so as to penetrate a gasket for preventing water
10 leakage, and the nozzle having a facing surface facing an inside of a drum, said facing surface
having left and right surfaces, the facing surface and the left and right surfaces being
completely opened, the nozzle dispersing the water, which is discharged to a lower side from
the connector into the inside of the drum.

15 2. The washing water circulation apparatus of claim 1, further comprising an
annular rib extending from a side surface of the gasket so as to hold and support an outer
surface of the connector.

3. The washing water circulation apparatus of claim 1, wherein the connector
20 further comprises a projection protruded from an outer circumference of the connector, for
preventing the connector from dropping under the gasket.

4. The washing water circulation apparatus of claim 1, wherein the injection unit
is comprised of a single body.

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5. The washing water circulation apparatus of claim 4, wherein the nozzle

comprises:

an upper horizontal part extending from one end toward the drum;

a vertical part extending from an opposite side to a side facing the drum to a lower side; and

5 a lower horizontal part extending from a lower end toward the drum.

6. The washing water circulation apparatus of claim 5, wherein the upper horizontal part has an upper surface, which is supported closely to the gasket.

10 7. The washing water circulation apparatus of claim 5, wherein the vertical part has a center portion having a convex shape opening toward the drum.

8. The washing water circulation apparatus of claim 5, wherein the lower horizontal part has a center portion having a convex shape opening upward.

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9. The washing water circulation apparatus of claim 5, wherein the lower horizontal part comprises a guide groove extending in left and right directions.

10. The washing water circulation apparatus of claim 9, wherein the lower horizontal part has an upper surface inclined downward from the guide groove toward the drum.

11. The washing water circulation apparatus of claim 1, wherein the connector and the nozzle of the injection unit are separate from each other.

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12. The washing water circulation apparatus of claim 11, wherein the connector is

a single body, and the nozzle extends from the gasket.

13. The washing water circulation apparatus of claim 12, wherein the nozzle comprises:

5 a vertical part extending downward from a lower surface of the gasket; and
a lower horizontal part extending from a lower end of the vertical part toward the drum.

14. The washing water circulation apparatus of claim 13, wherein the vertical part
10 has a center portion having a convex shape opening towards the drum.

15. The washing water circulation apparatus of claim 13, wherein the lower horizontal part has a center portion having a convex shape opening upward.

15 16. The washing water circulation apparatus of claim 13, wherein the lower horizontal part comprises a guide groove extending in left and right directions.

17. The washing water circulation apparatus of claim 16, wherein the lower horizontal part has an upper surface inclined downward from the guide groove toward the
20 drum.

18. A washing machine, comprising:

a case:

an outer tub provided within the case and storing water therein;

25 an inner tub provided rotatable within the outer tub and having a plurality of holes communicating with an inner space of the outer tub;

a circulation motor communicating with a lower side of the outer tub, for pumping the water in the outer tub;

a circulation hose of which one end is connected with the circulation motor, for guiding the pumped water; and

5 an injection unit including a connector of which one end is connected with the circulation hose, and a nozzle provided below the gasket, the connector being installed between a door and the tub and provided so as to penetrate a gasket for preventing water leakage, and the nozzle having a facing surface, said facing surface facing the inner tub and having left and right surfaces, the facing surface and the left and right surfaces being
10 completely opened, the nozzle dispersing water which is discharged to a lower side from the cylinder into the inner tub drum to inject the dispersed water.

19. The washing machine of claim 18, wherein the nozzle comprises:
an upper horizontal part extending from the other end toward the drum;
15 a vertical part extending from an opposite side to a side facing the drum to a lower side; and
a lower horizontal part extending from a lower end toward the drum.

20. The washing machine of claim 19, wherein the vertical part has a center
20 portion having a convex shape opening toward the drum, and the lower horizontal part has a center portion having a convex shape opening upward.

21. The washing machine of claim 19, wherein the lower horizontal part comprises
a guide groove extending in left and right directions, and the lower horizontal part has an
25 upper surface inclined downward from the guide groove toward the drum.

22. The washing machine of claim 18, wherein the nozzle comprises:
a vertical part extending downward from a lower surface of the gasket; and
a lower horizontal part extending from a lower end of the vertical part toward the
drum.

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23. The washing machine of claim 22, wherein the vertical part has a center
portion having a convex shape opening toward the drum, and the lower horizontal part has a
center portion having a convex shape opening upward.

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24. The washing machine of claim 22, wherein the lower horizontal part comprises
a guide groove extending in left and right directions, and the lower horizontal part has an
upper surface inclined downward from the guide groove toward the drum.